

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

TRAUMA and FBs in ENT

Objectives of the lecture

- Discuss the presentation of patients with trauma to the nose, ear or the larynx and patients with ingested or inhaled FBs or with FBS in the nose or the ear.
- Discuss the management of those patient with emphasis on the emergency treatment.

Nasal Trauma

Manifestations of nasal trauma

- Fracture nasal bone
- Septal injury
 - Displacement
 - Hematoma
 - Perforation
- Synechia
- CSF rhinorrhea
- Epistaxis

Fracture Nasal Bone

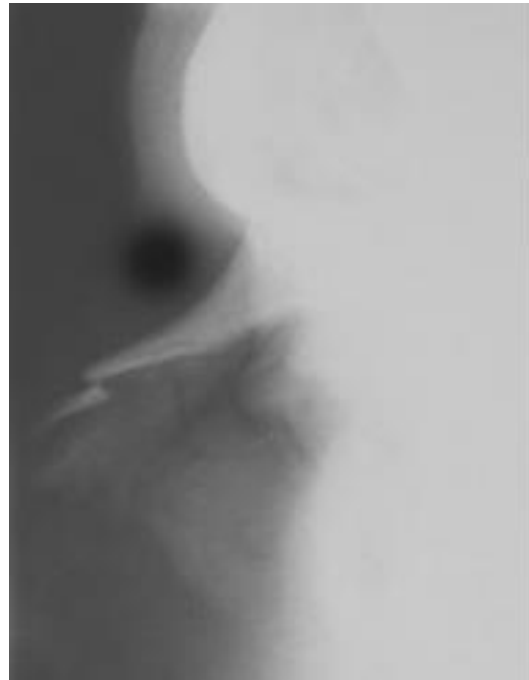


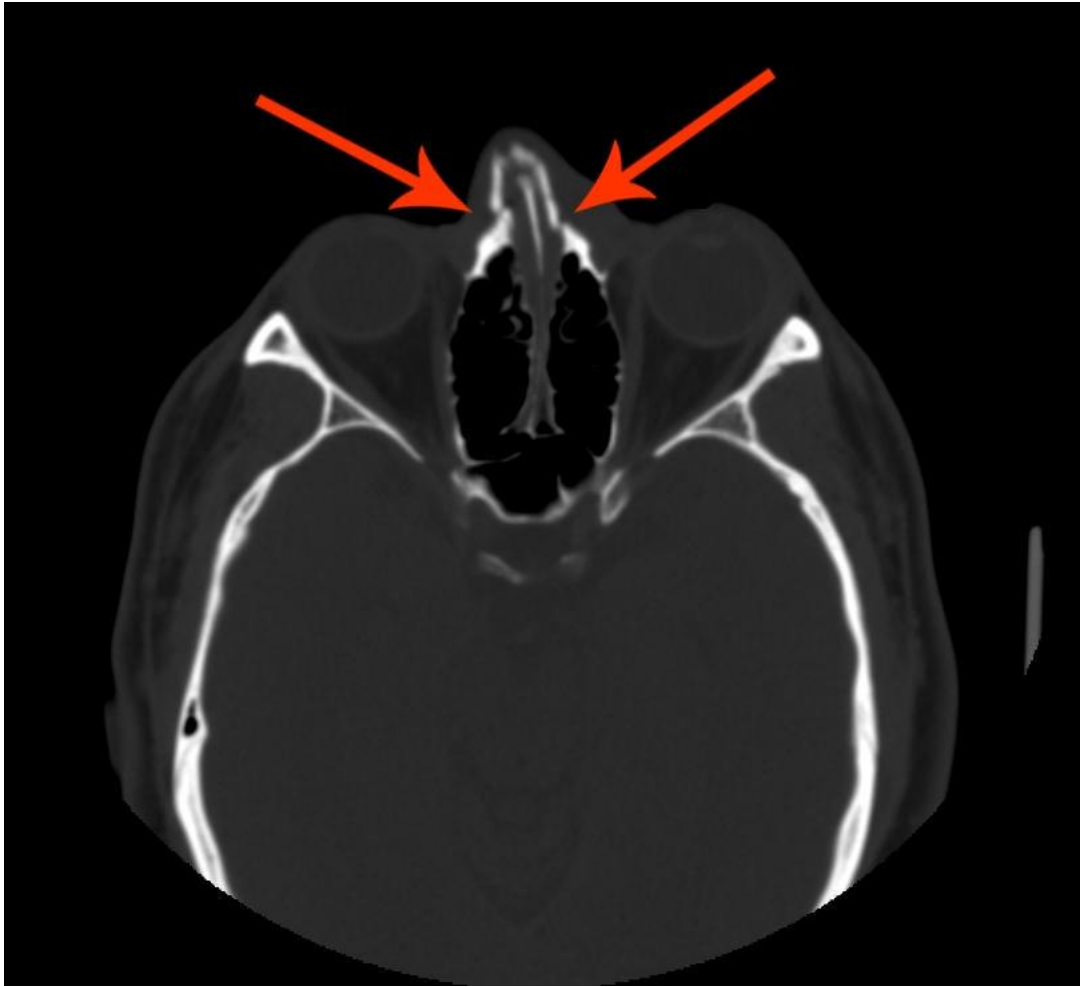
Physical Examination



Radiology

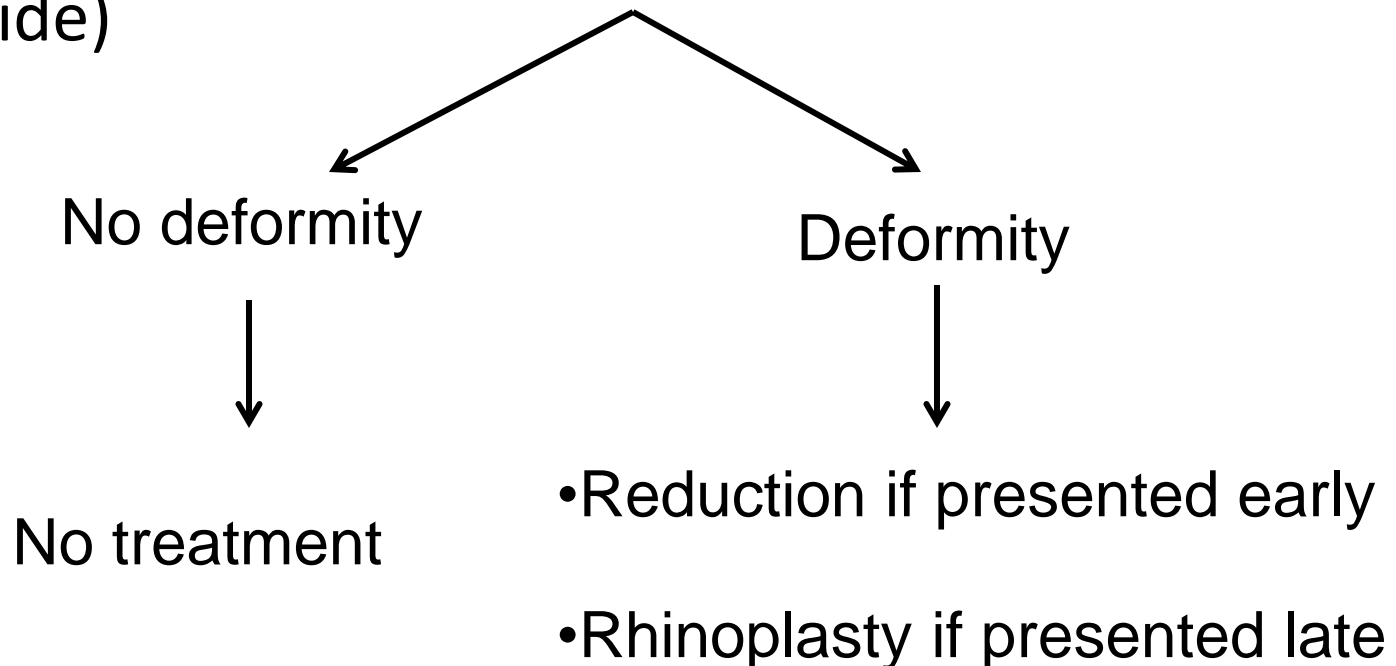
- Usually **is not necessary** because treatment depends on the clinical findings





Management of fractured nasal bone

- Depends upon the presence or the absence of nasal deformity (for proper assessment of the “shape” of the nose you may wait “few” days for the edema to subside)

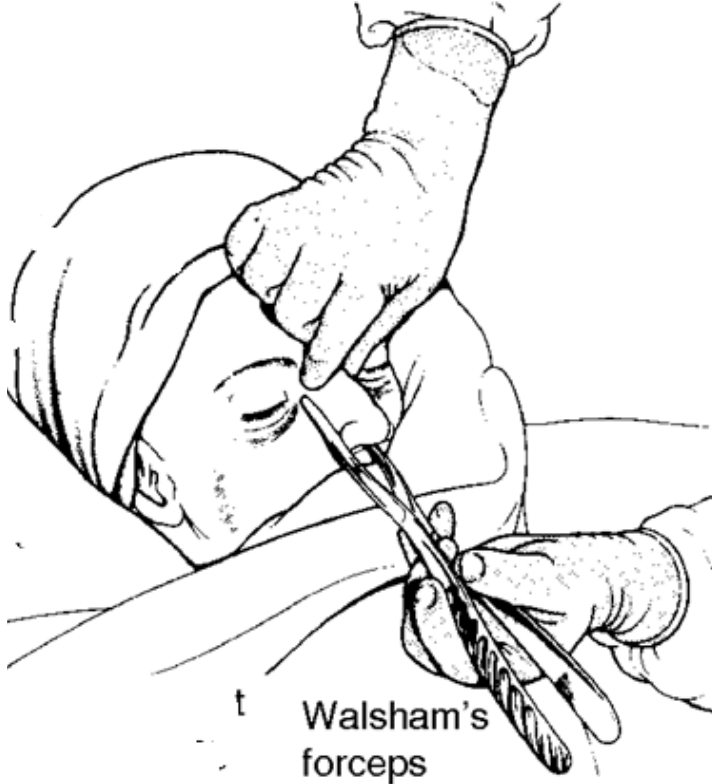


Reduction



(c)

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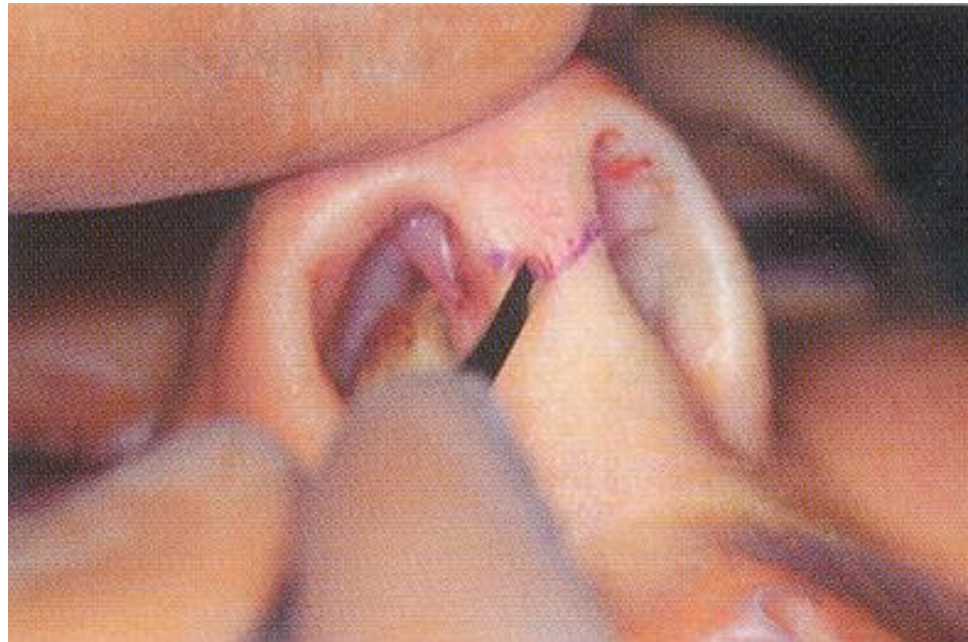


Walsham's forceps



Rhinoplasty

- To correct “old” fractures



Nasal Septum Injury

Displacement of nasal septum



Presentation

- May be asymptomatic
- Nasal obstruction
- Cosmetic deformity

Treatment of displacement of nasal septum

- No symptoms: no treatment
- Symptomatic
 - Early presentation: Reposition
 - Late presentation: Septoplasty



Septoplasty

Cartilage



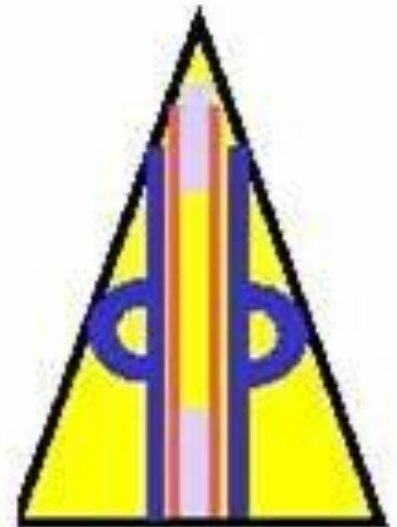
Septal Deviation



Mucosal lining and perichondrium are separated from cartilage

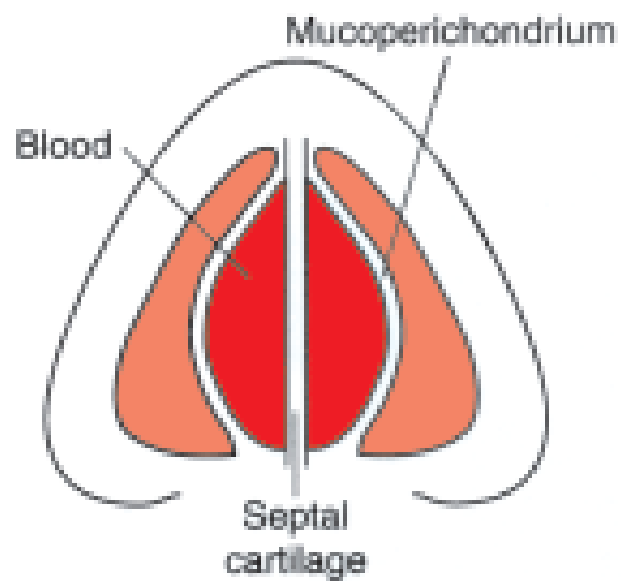


Deviated portion of cartilage removed



Lining replaced & splints (blue) inserted

Septal hematoma



Septal hematoma

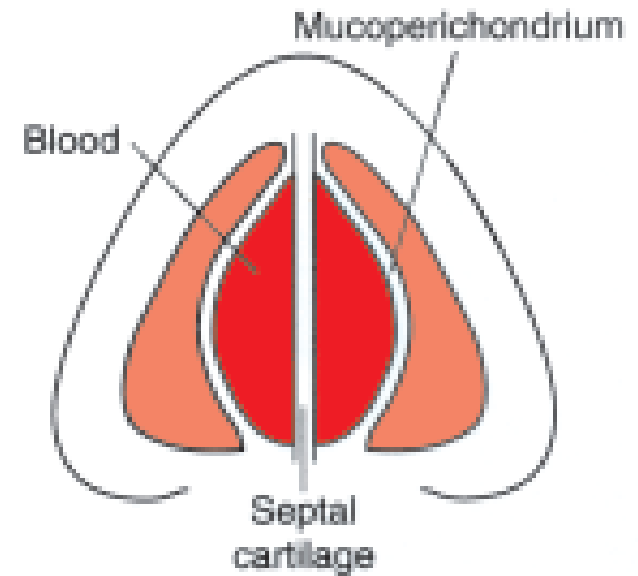


Presentation

- Nasal obstruction

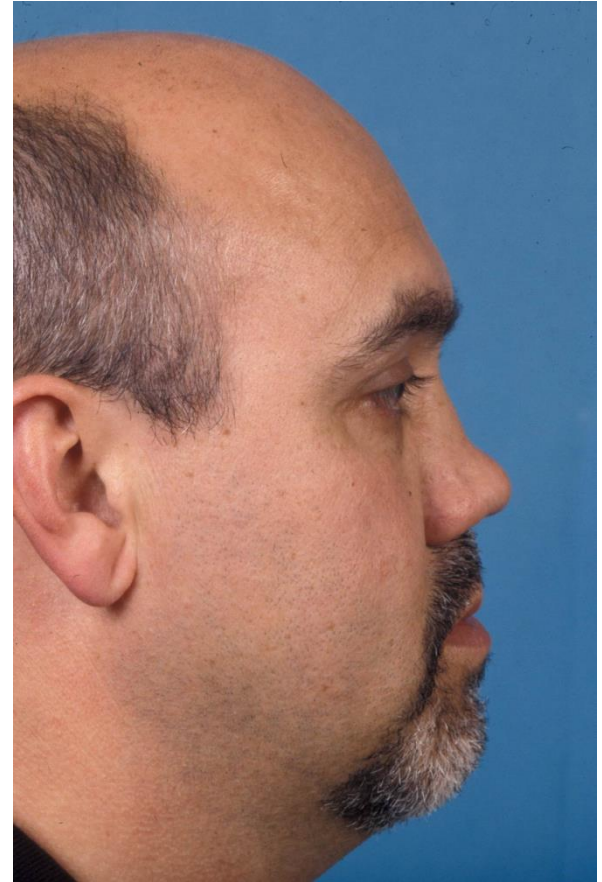
Complications of Septal hematoma

- Necrosis of the cartilage
 - Deformity



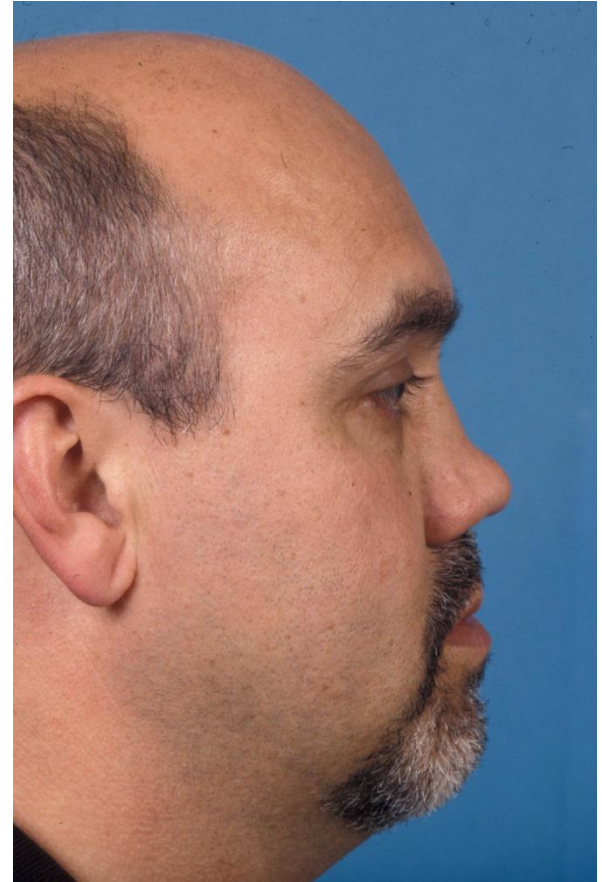
Complications of Septal hematoma

- Necrosis of the cartilage
 - Deformity



Complications of Septal hematoma

- Necrosis of the cartilage
 - Deformity
- Infection
 - Septal abscess
 - Spread to the intracranium

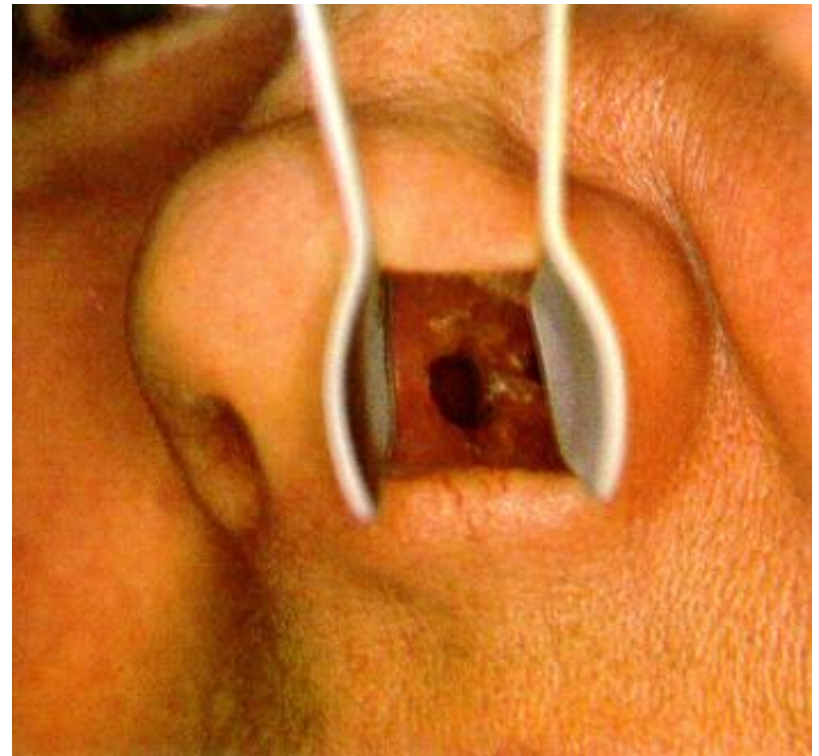


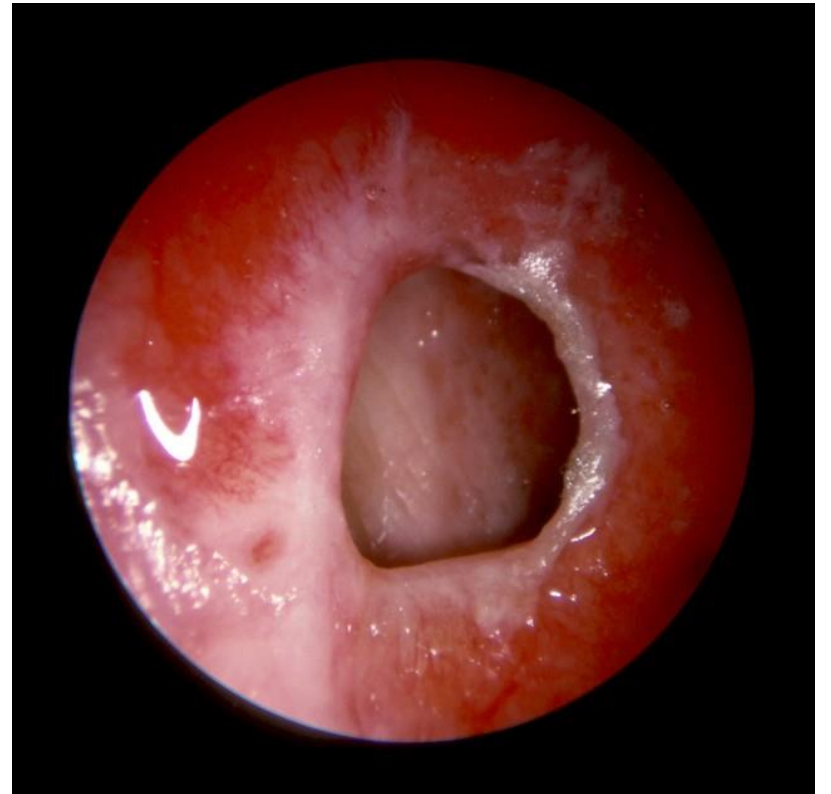
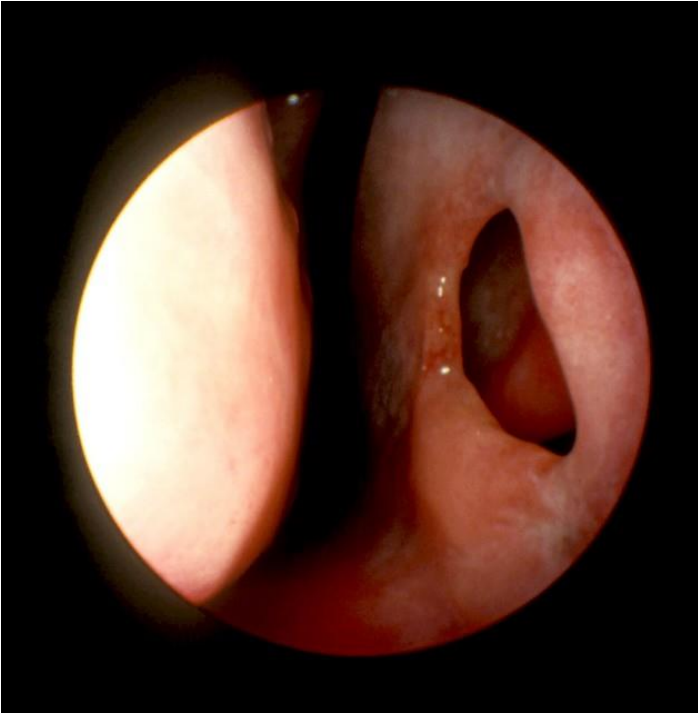
Treatment of septal hematoma

- **Immediate** incision & drainage

Traumatic septal perforation

- Mostly due to surgical trauma
- May be due to self-inflicted trauma



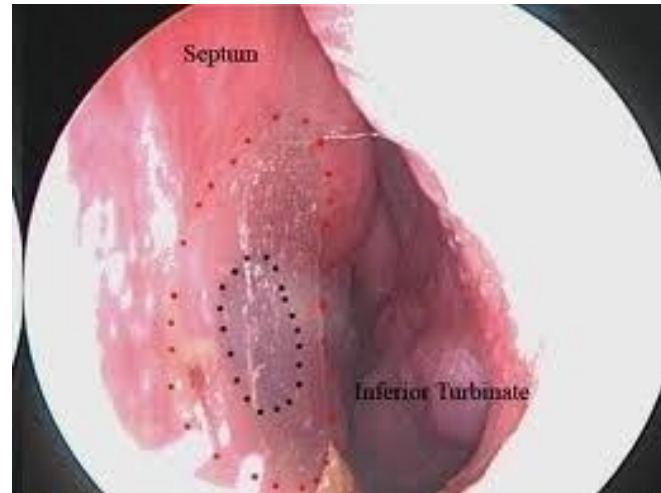
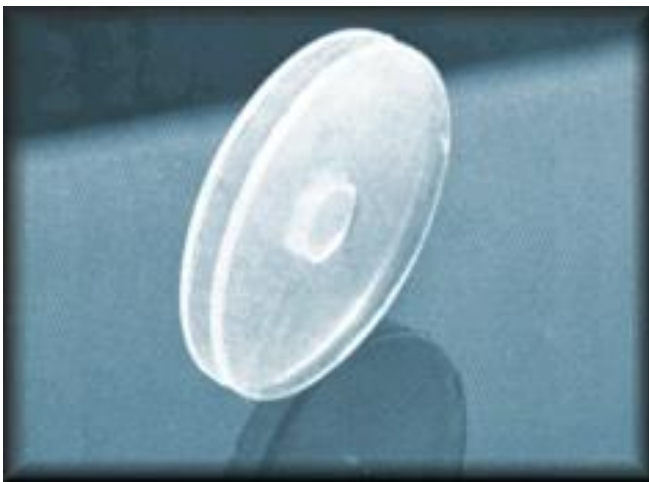


Symptoms

- No symptoms
- Whistling sound during breathing
- Crusting and epistaxia

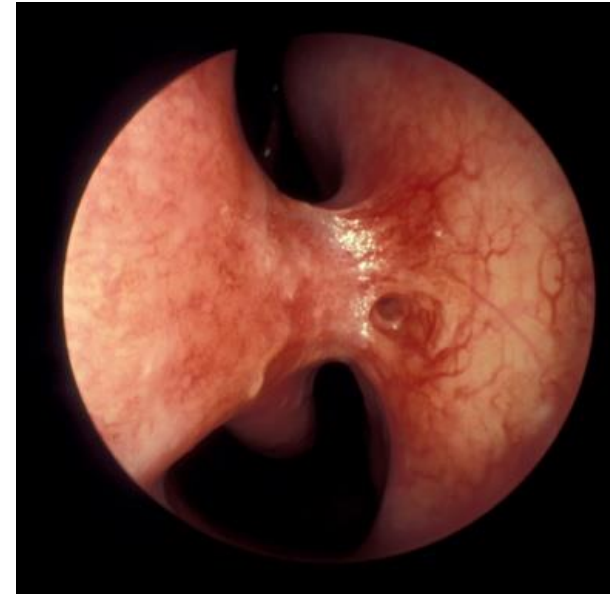
Treatment

- No treatment
- Nasal wash
- Surgical repair
- Insertion of silicon “button”



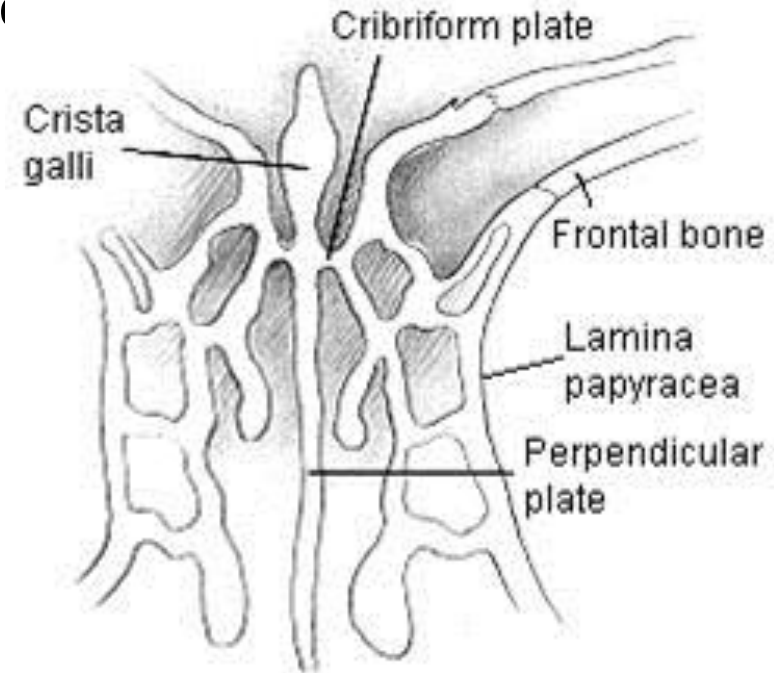
Synechia

- Usually follow surgery
- May be asymptomatic
- May cause nasal obstruction
- If symptomatic, treatment is by division and insertion of silastic sheets (for 10 days)



CSF Rhinorrhea

- Due to injury of the roof of the nose and the dura



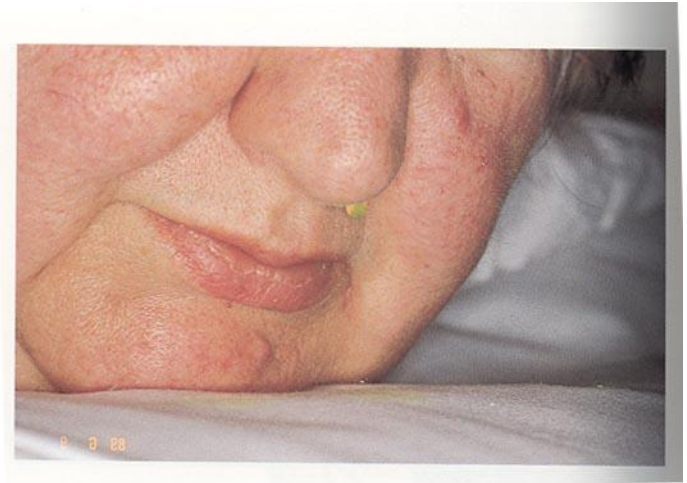
CSF Rhinorrhea

- Due to injury of the roof of the nose and the dura



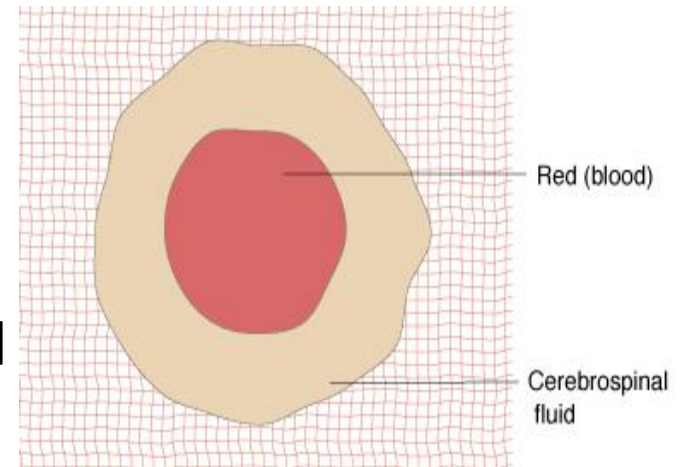
CSF Rhinorrhea

- Due to injury of the roof of the nose and the dura
- Unilateral watery rhinorrhea increases by bending forward, exertion and coughing



CSF Rhinorrhea

- Due to injury of the roof of the nose and the dura
- Unilateral watery rhinorrhea increases by bending forward, exertion and coughing
- Halo sign
- Diagnosis is confirmed by biochemical analysis (Beta-2-transferrin) and by radiology
- Most cases resolve with conservative treatment
- Surgical repair may be needed in minority of cases



Complications of CSF Rhinorrhea

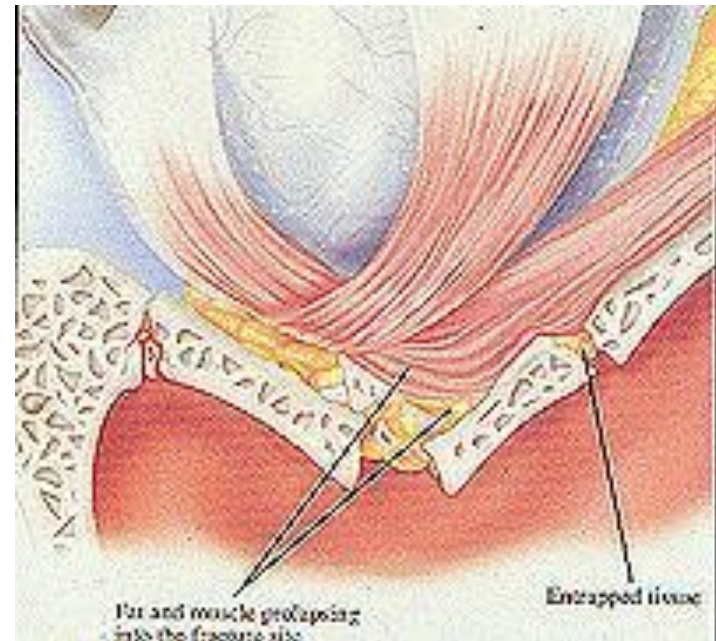
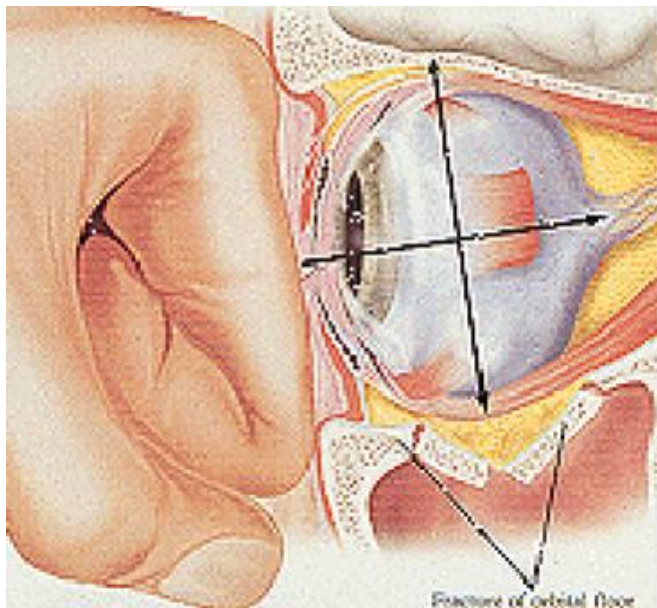
- Meningitis
- Tension pneumocephalus



Sinus Trauma

Blow-out fracture

- Injury of the orbital floor (maxillary sinus roof) due to blunt trauma to the orbit



Physical examination

- Enophthalmos
- Subconjunctival hge
- Diplopia and restriction of upward gaze



Radiology



Tear-drop sign

Treatment

- Repair

Nasal Foreign Bodies

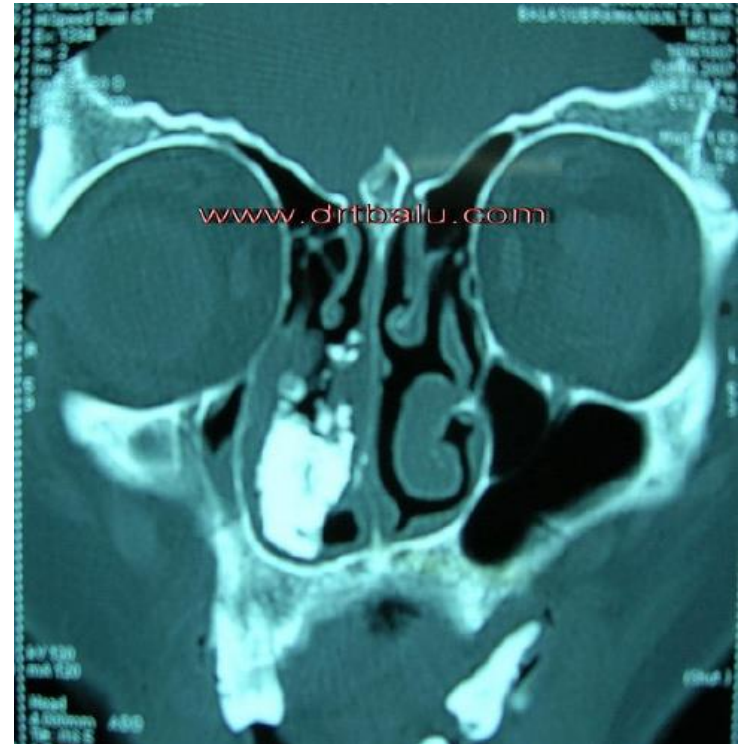
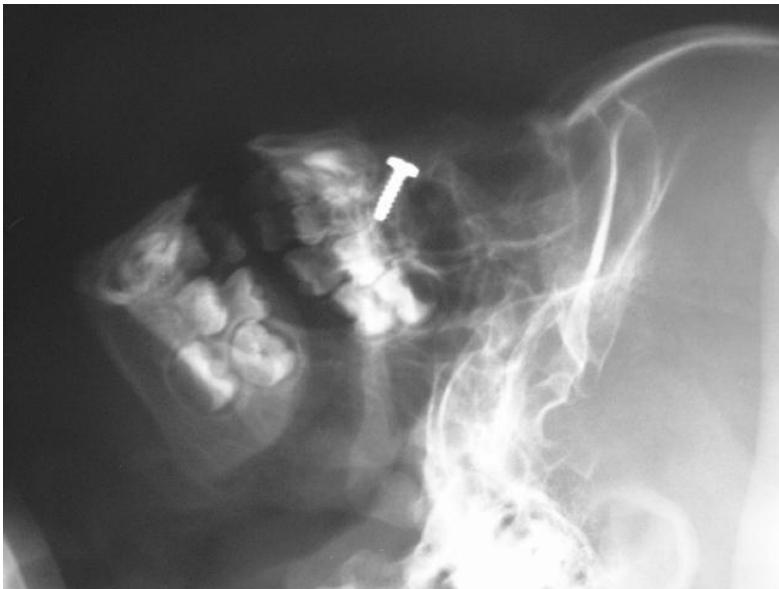
- May be asymptomatic
- Unilateral nasal obstruction
- Bad odor blood stained unilateral nasal discharge

Examination





Radiology



Rhinolith

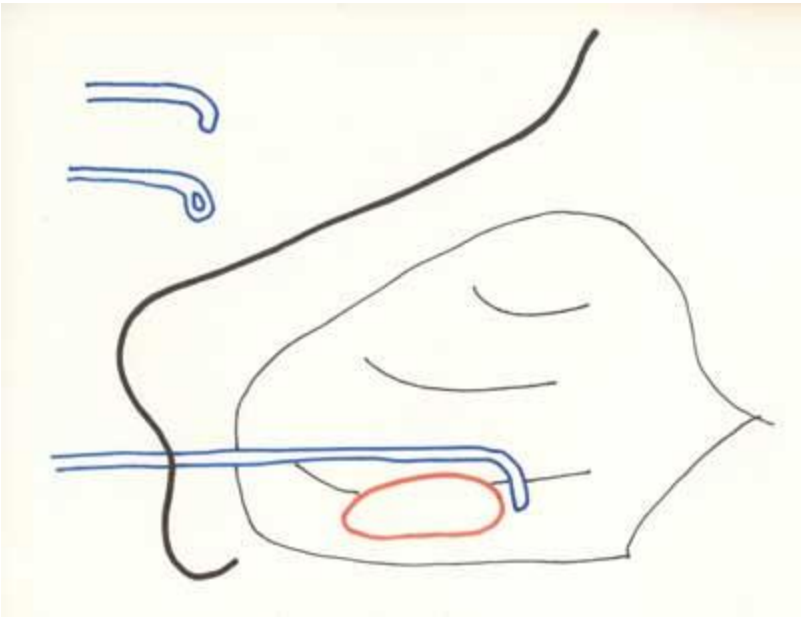


Treatment

- Removal (general anesthesia may be needed)
- Disc batteries removal is an emergency because of sever necrosis due to release of NaOH, KOH, & mercury







Ear Trauma

Trauma to the Auricle

- Laceration





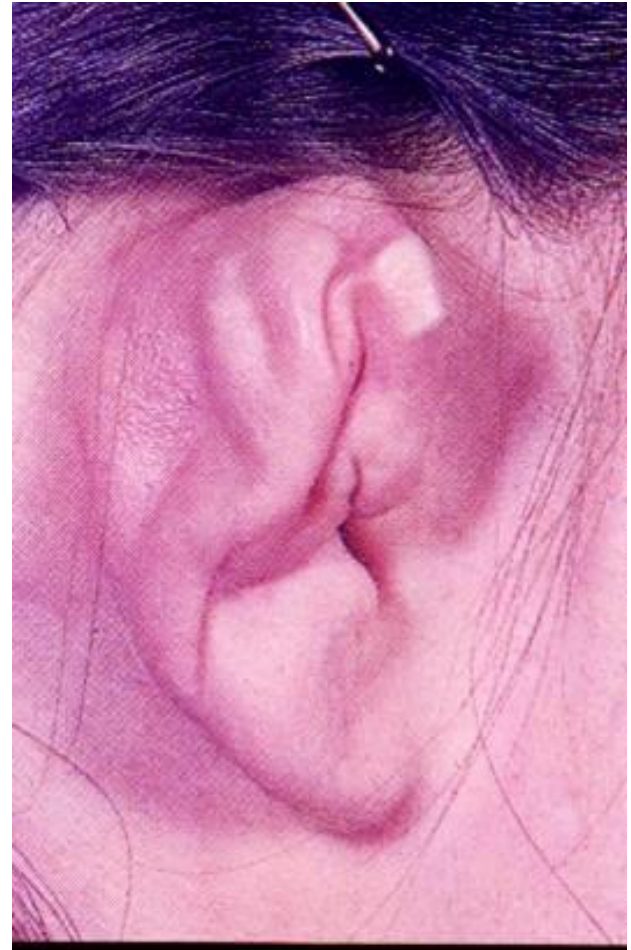


Trauma to the auricle

- Hematoma auris

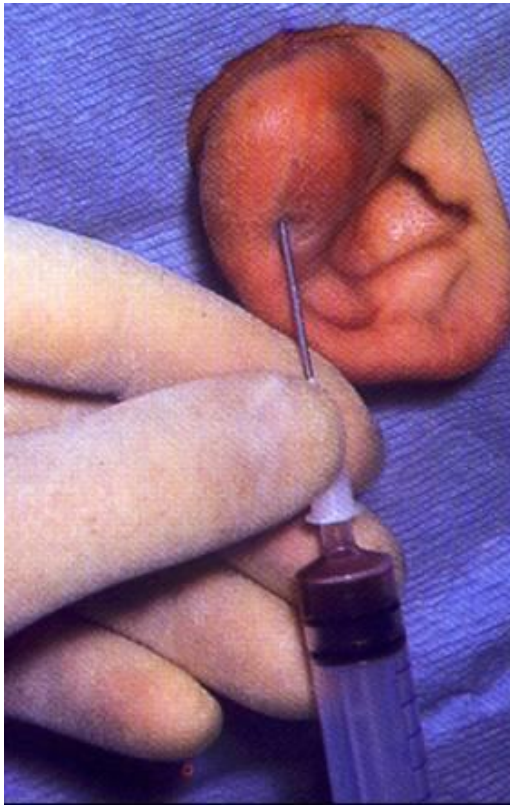


Complication



Cauliflower ear

Treatment

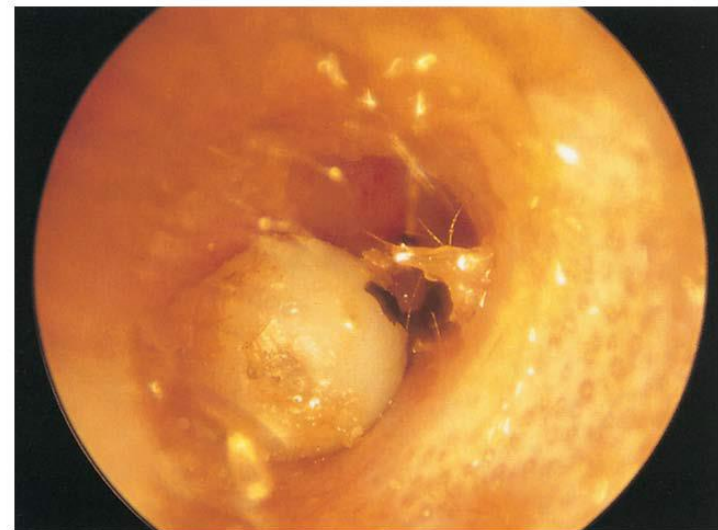


F Bs external ear

Presentation

- No symptoms
- Earache
- Deafness

FBs external canal



Removal FBs ear

- Full cooperation from the patient: otherwise go to general anesthesia
- Disc batteries are emergency
- Live insects to be killed or floated
- Removal by : syringing and/or by instrumentation









Traumatic TM Perforation

Presentation

- History of trauma
- Earache
- Deafness
- Bloody otorrhea

Traumatic TM Perforation





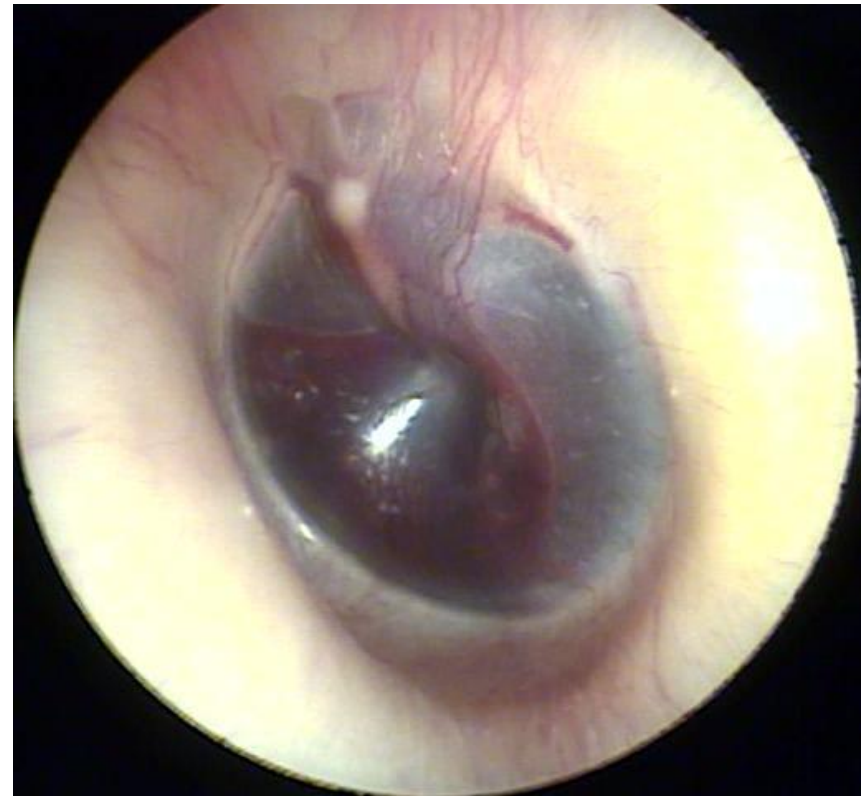
Treatment of traumatic TM perforation

- Observation
 - Most cases heal spontaneously
 - No suction, no drops & no water
- Elective myringoplasty

Middle ear trauma

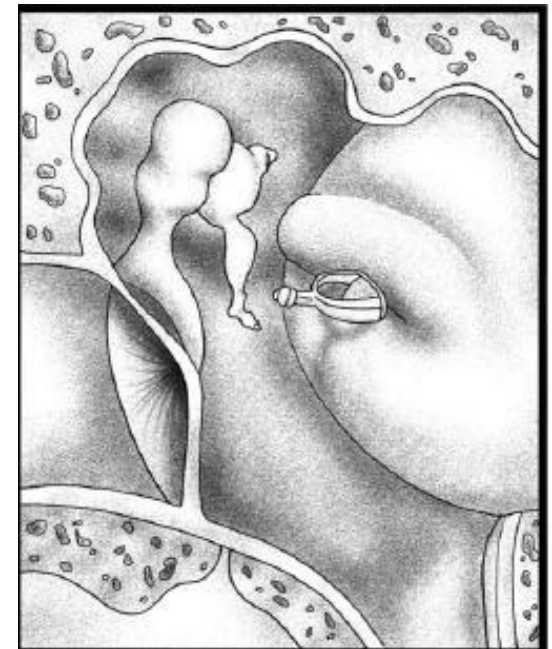
Hemotympanum

- Usually is asymptomatic
- May cause conductive hearing loss
- Treated by observation because most cases resolve spontaneously



Traumatic Ossicular disruption

- Suspected if trauma followed by CHL with intact TM
- Diagnosis is confirmed by CT and/or by surgical exploration (tympanotomy)
- Treatment is by surgical repair



Otitic barotrauma

- Pathological conditions of the ear induced by pressure changes .
- Middle ear otitic barotrauma results from failure of the Eustachian tube to equalize an increasing atmospheric pressure
- Occurs most commonly during **descent** from high altitudes in aircraft or during **descent** in underwater diving
- Pathology: the negative middle ear pressures causes transudate in the middle ear, rupture of superficial vessels, retraction of TM, and may cause perforation
- Symptoms: discomfort, pain & deafness.

Examination



Treatment

- Prophylactic

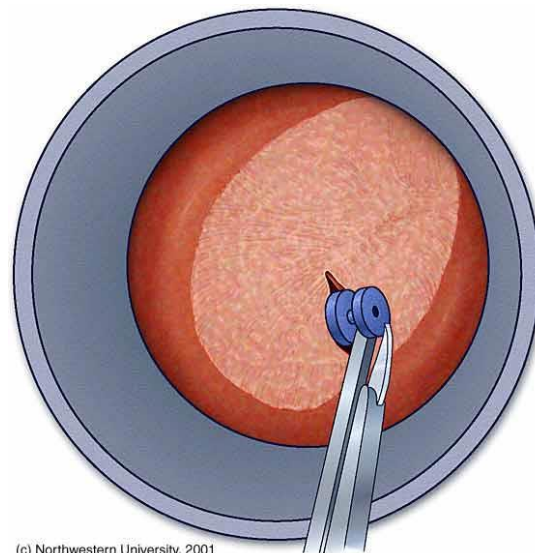
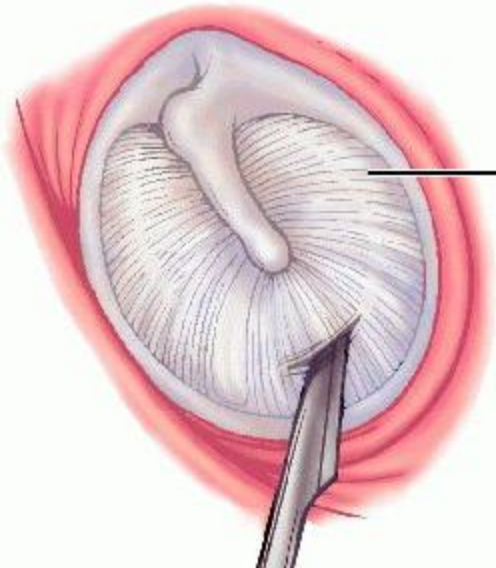
Treatment

- Prophylactic
- Decongestant, analgesic and auto inflation (Valsalva maneuver)



Treatment

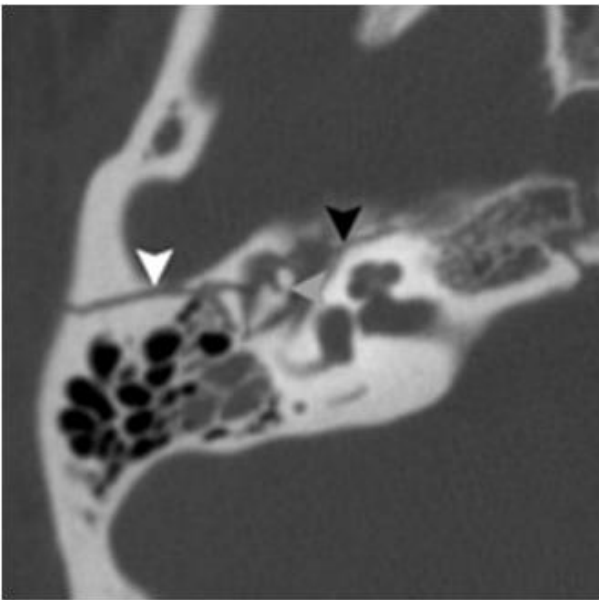
- Prophylactic
- Decongestant, analgesic and auto inflation (Valsalva maneuver)
- Myringotomy \pm VT insertion



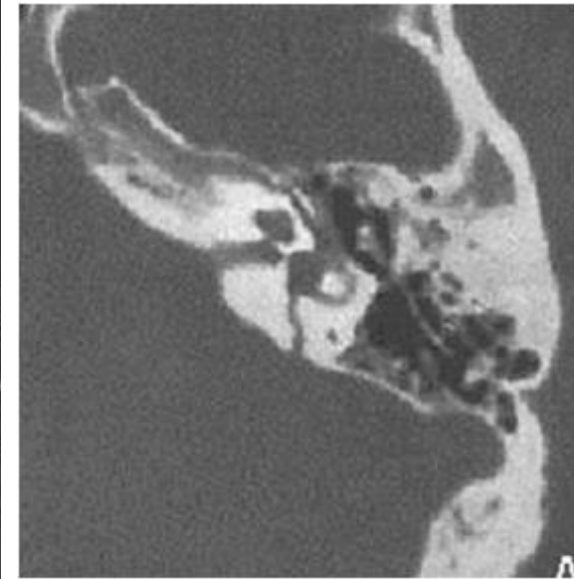
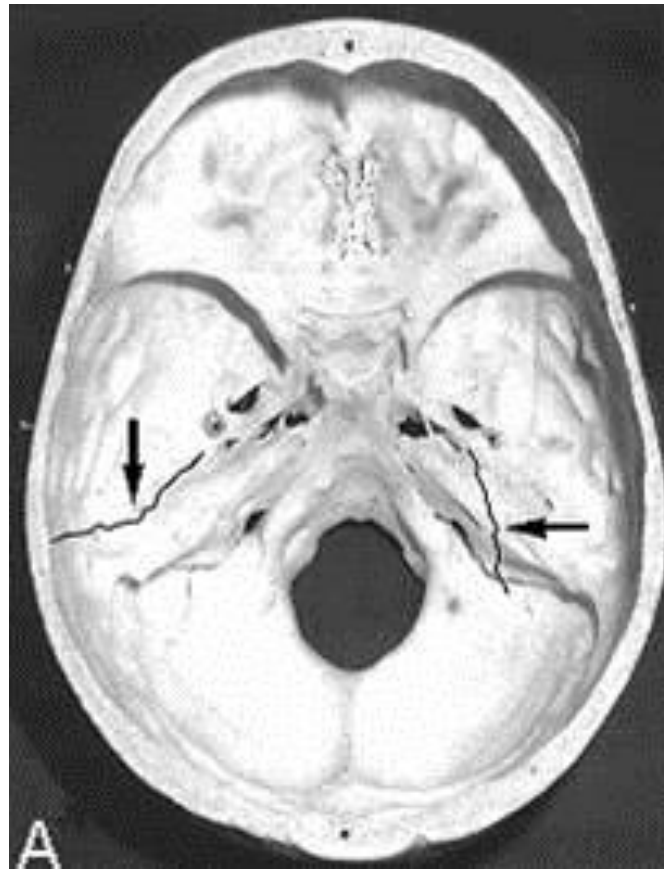
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Fracture temporal bone



Longitudinal #



Transverse #

Temporal bone fractures

Longitudinal fracture

Transverse fracture

Temporal bone fractures

Longitudinal fracture

70%

Transverse fracture

20%

Temporal bone fractures

Longitudinal fracture

Transverse fracture

70%

20%

Conductive hearing loss
(rupture drum,
hemotympanum or
ossicular disruption)

Temporal bone fractures

Longitudinal fracture

70%

Conductive hearing loss
(rupture drum,
hemotympanum or
ossicular disruption)

Transverse fracture

20%

SNHL & vertigo
(Labyrinthine injury)

Temporal bone fractures

Longitudinal fracture

70%

Conductive hearing loss
(rupture drum,
hemotympanum or
ossicular disruption)

Facial nerve paresis is not
common

Transverse fracture

20%

SNHL & vertigo
(Labyrinthine injury)

Temporal bone fractures

Longitudinal fracture

70%

Conductive hearing loss
(rupture drum,
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Facial nerve paresis is not
common

Transverse fracture

20%

SNHL & vertigo
(Labyrinthine injury)

Facial nerve paralysis is
common

Manifestation

- Battle sign



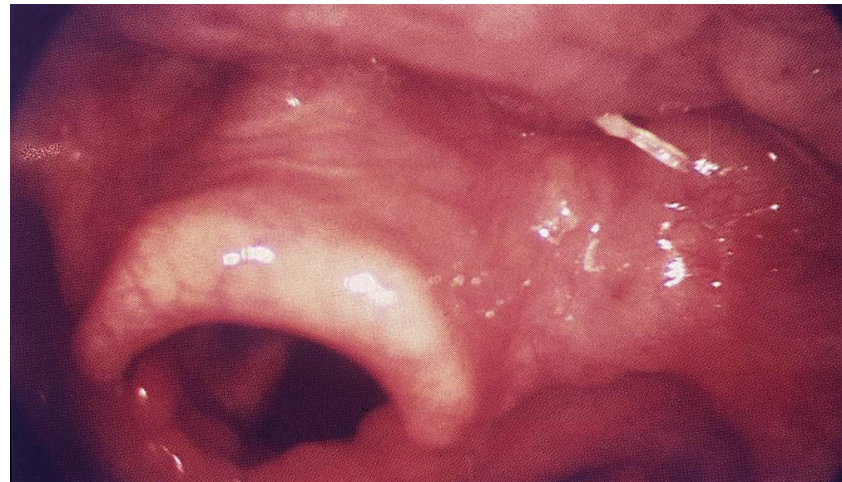
Manifestations

- Battle sign
- TM perforation
- Hemotympanum
- CSF otorrhea or rhinorrhea
- Ossicular disruption
- SNHL
- Vertigo
- Facial nerve paralysis



FB pharynx

- Usually sharp FB
- Fish bone is the most common
- Common sites: tonsils, base of tongue and vallecula
- Diagnosis is by physical examination
- Treatment is by removal

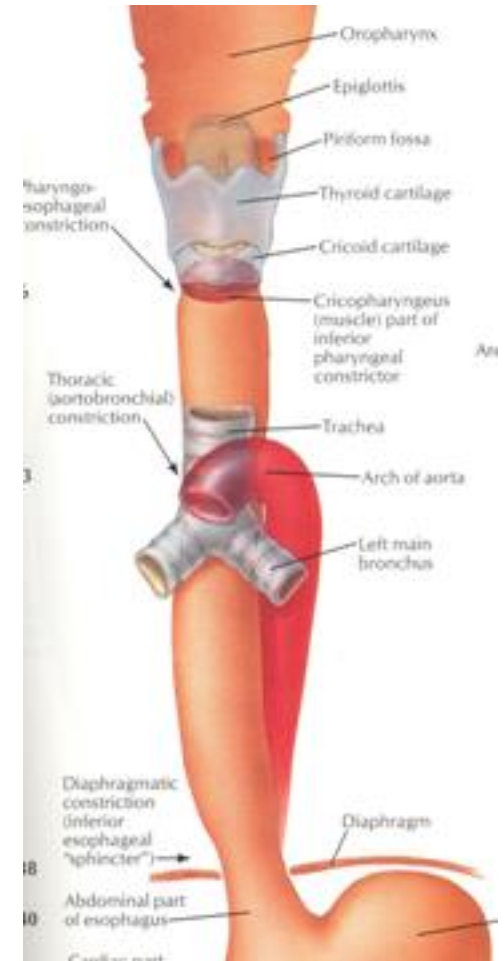


FB esophagus

- Coins – 75%
- Meat, dentures, disc batteries etc

FB esophagus

- Common locations
 - Cricopharyngeus
 - Aorta/left mainstem bronchus
 - Gastroesophageal junction



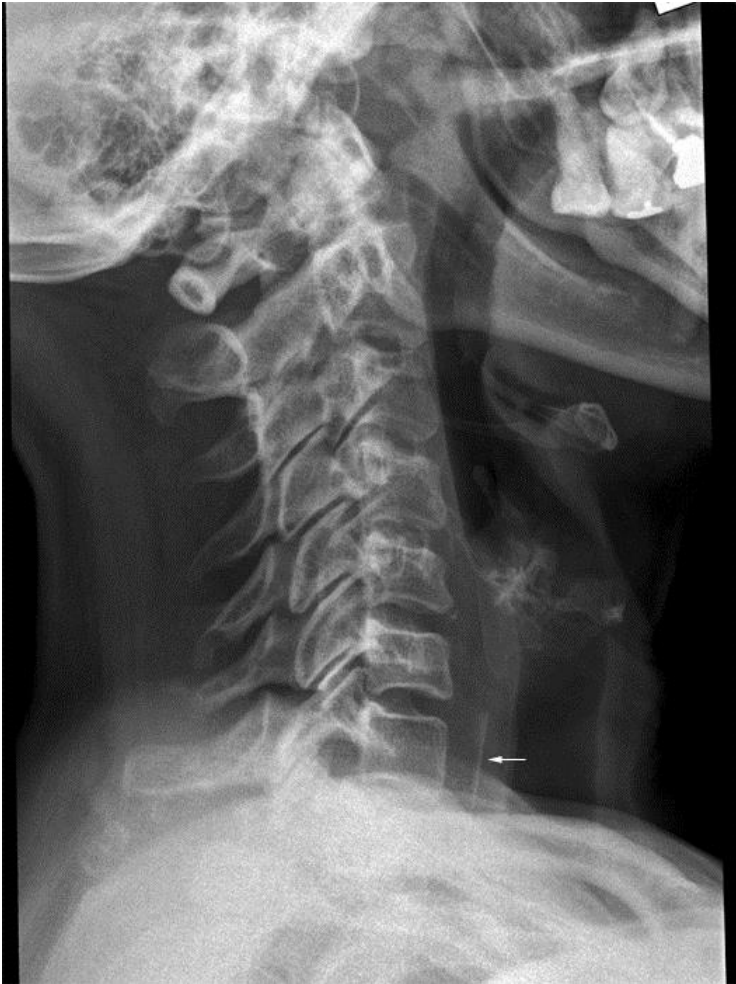
Diagnosis

- Symptoms
 - Dysphagia, odynophagia, choking & cough
- Physical exam
 - Drooling, refuses oral intake
- Radiology

Plain X ray





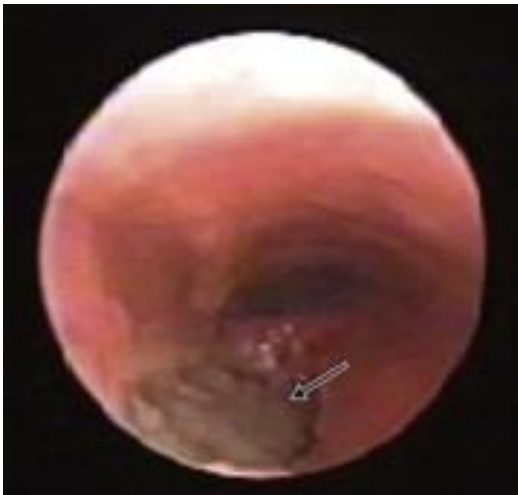


Diagnosis

- Symptoms
 - Choking, coughing, dysphagia, odynophagia
- Physical exam
 - Drooling, refuses oral intake
- Radiology
- Esophogoscopy

Treatment

- Removal via esophagoscopy
- Disc batteries and sharp objects removal is an emergency because of the risk of perforation



Laryngeal Trauma

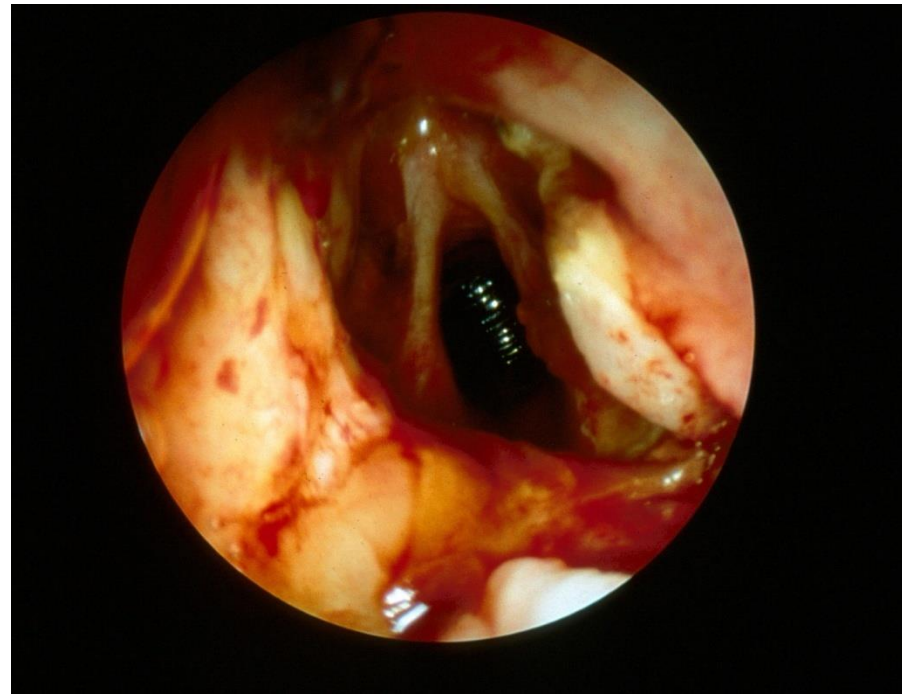
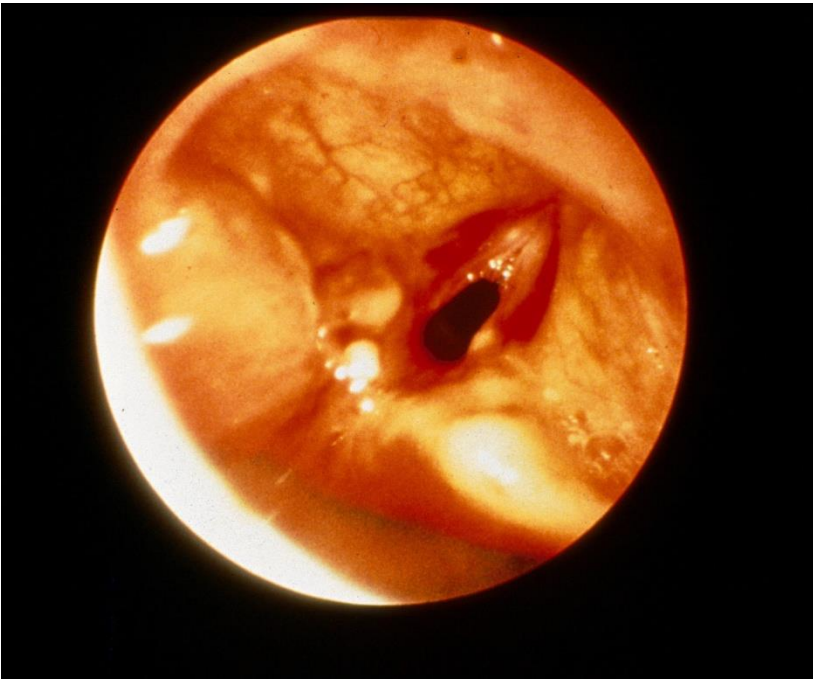
Presentation



Presentation

- Stridor
- Hoarseness
- Subcutaneous emphysema
- Hemoptysis
- Laryngeal tenderness, swelling and edema

Laryngoscopic Exam



Treatment

- Tracheostomy if there is respiratory distress or bleeding
- Explore and repair

Foreign bodies of the larynx

- Dyspnea
- Cough
- Hoarseness or aphonia



Treatment

- Heimlich Maneuver

Heimlich Maneuver



1. Lean the person forward slightly and stand behind him or her.



2. Make a fist with one hand.



3. Put your arms around the person and grasp your fist with your other hand near the top of the stomach, just below the center of the rib cage.



4. Make a quick, hard movement, inward and upward.

Treatment

- Heimlich Maneuver
- Slapping the back with the patient's head down

Place the infant stomach-down across your forearm and give five quick, forceful blows on the infant's back with heel of your hand

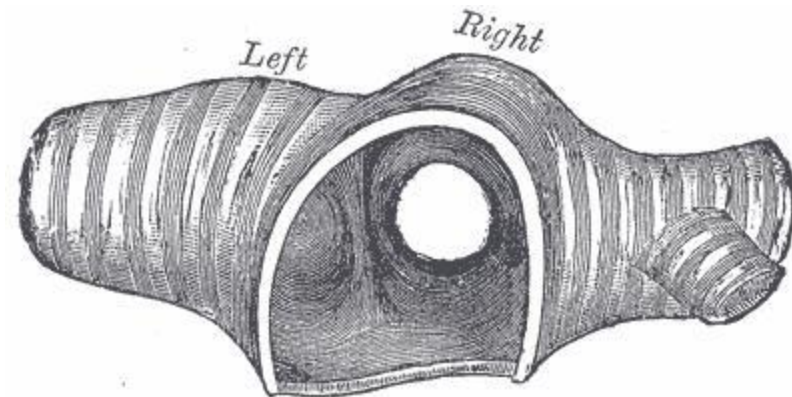
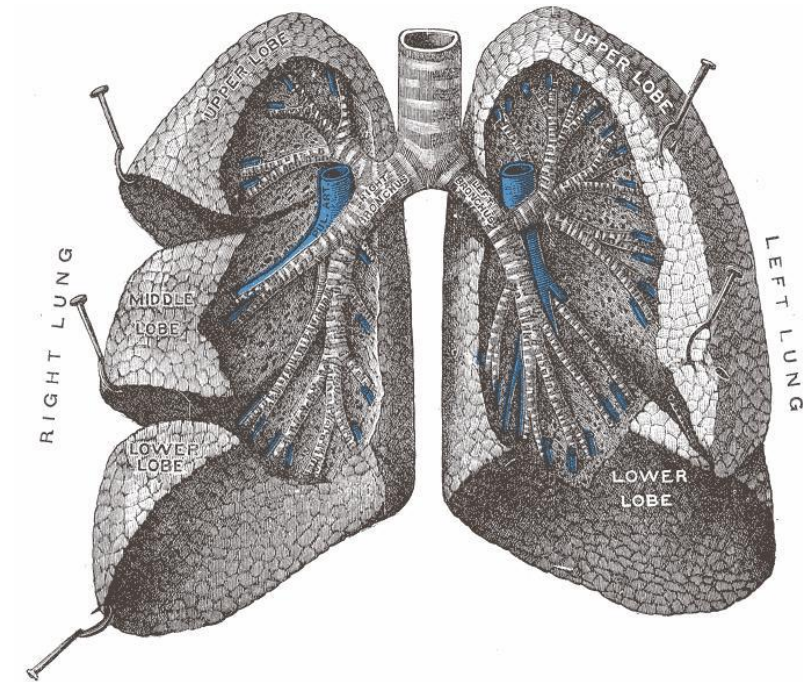


TREATMENT

- Heimlich Maneuver
- Slapping the back with the patient's head down
- Manual removal
- Removal by laryngoscopy
- Tracheostomy or laryngostomy (cricothyrotomy)

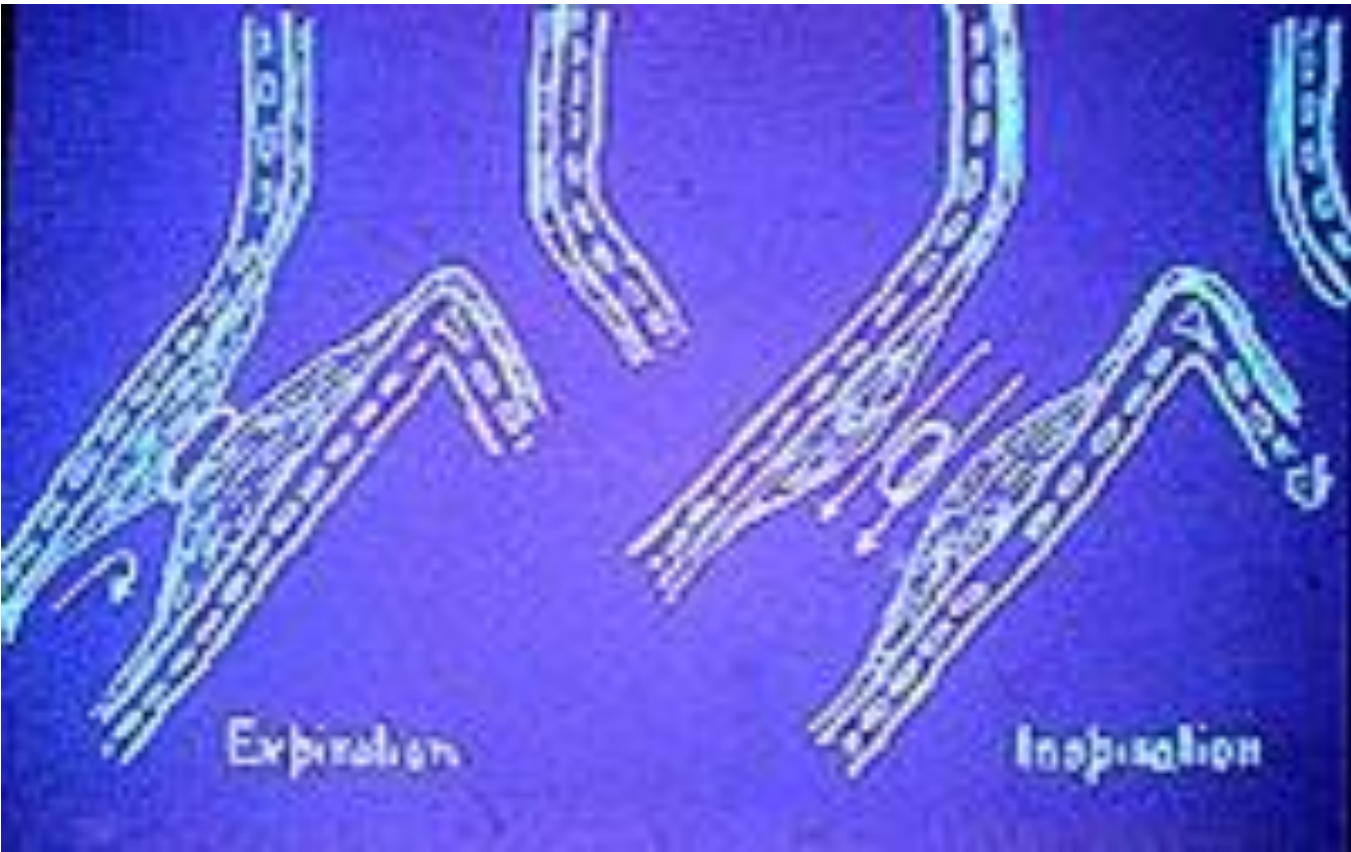
Foreign bodies in the tracheobronchial tree

- Usually in infants and children
- Most FB's are organic material (mostly food derivatives)
- Location: Mostly in the right side (60%)



CLINICAL PRESENTATION

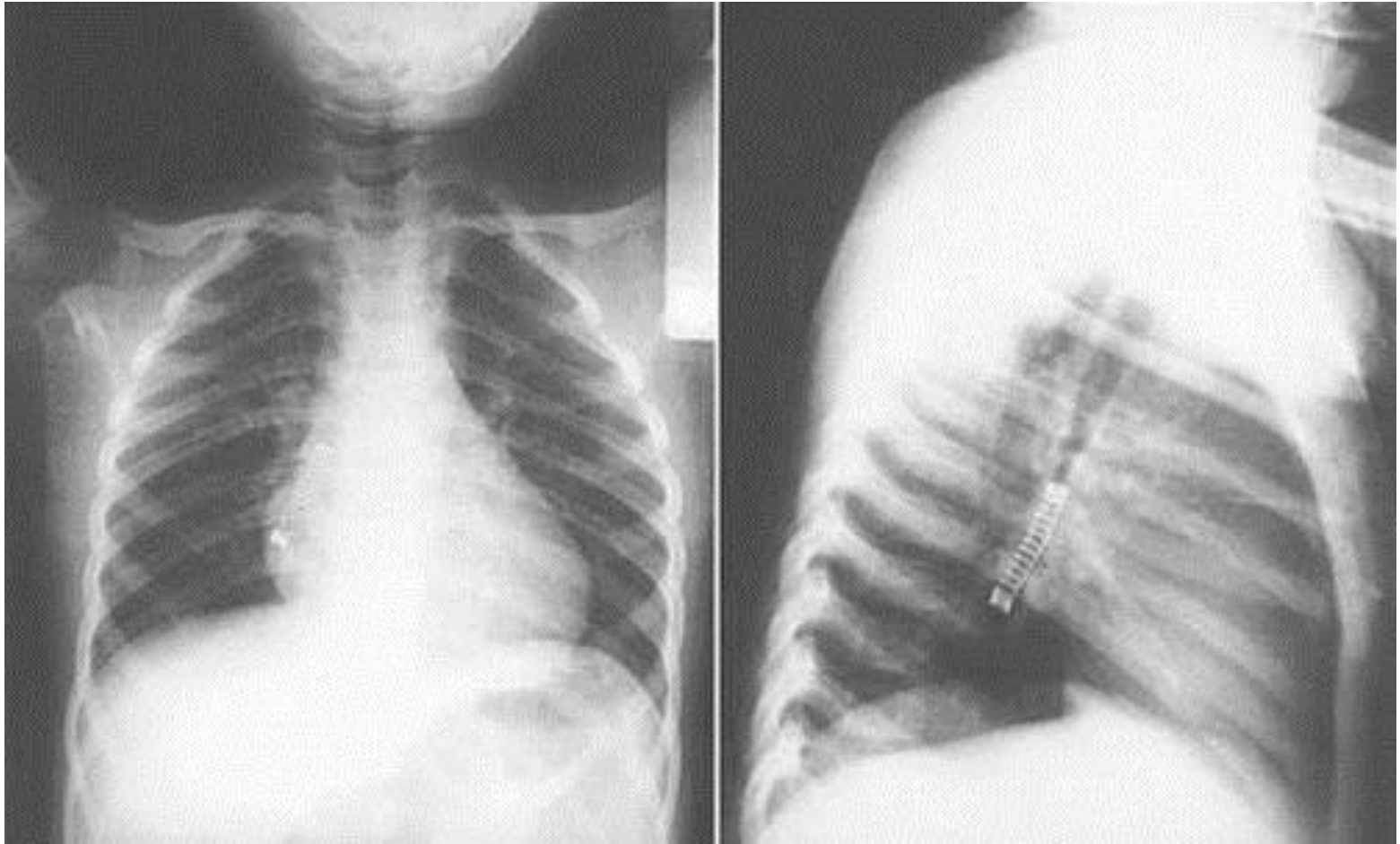
- Choking, cough, gagging & cyanosis
 - Caused by laryngeal reflexes
- Asymptomatic phase
 - Due to fatigue of cough reflex
- Wheeze, intractable cough, persistent or recurrent chest infection.
 - Due to emphysema, atelectasis or infection

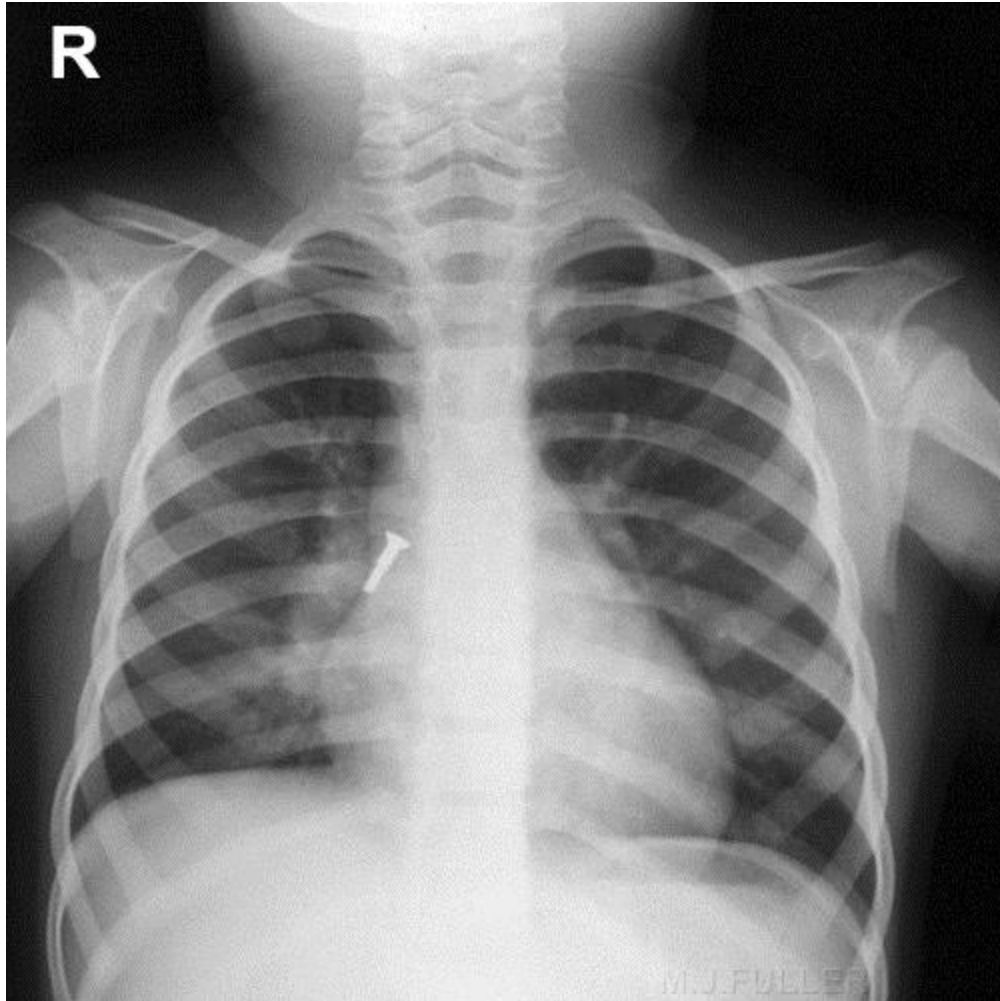


Radiology of tracheobronchial F.Bs

1 Normal

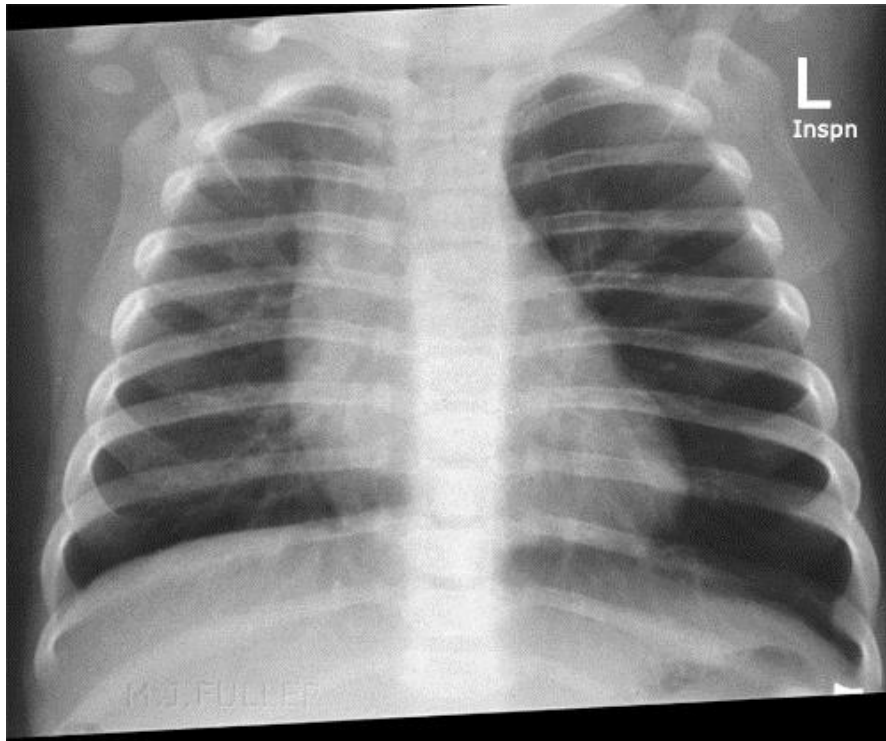
2 Radio-opaque FB



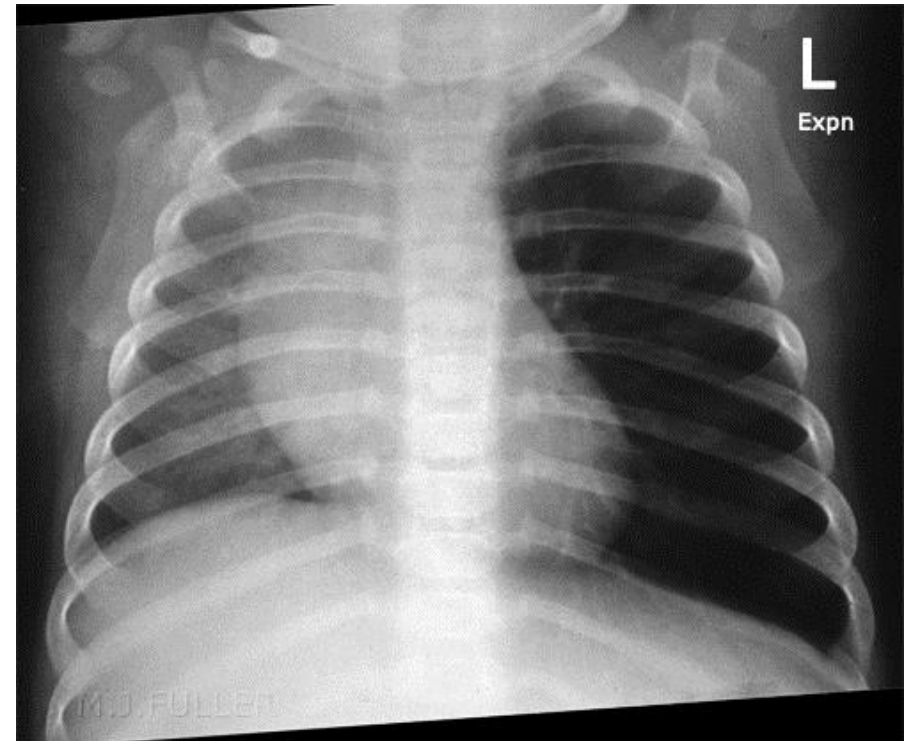




3 Emphysema



Inspiration

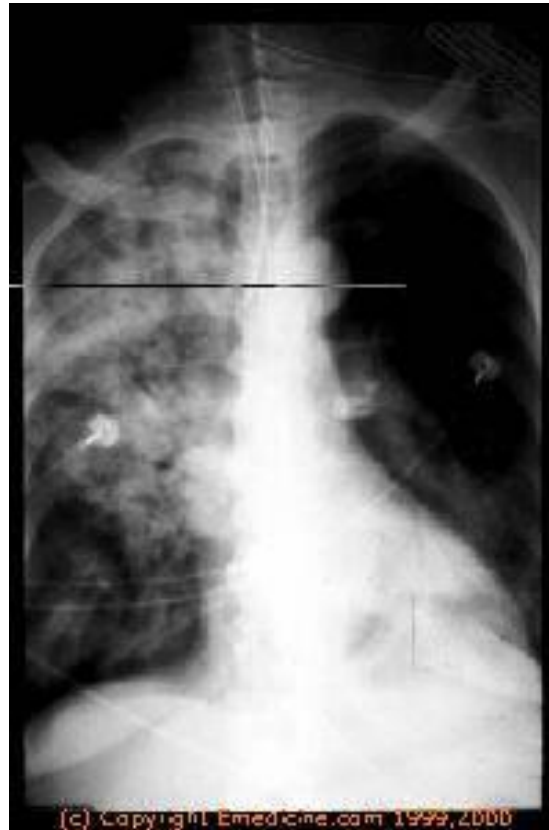


Expiration

4 Collapse



5. Bronchopneumonia

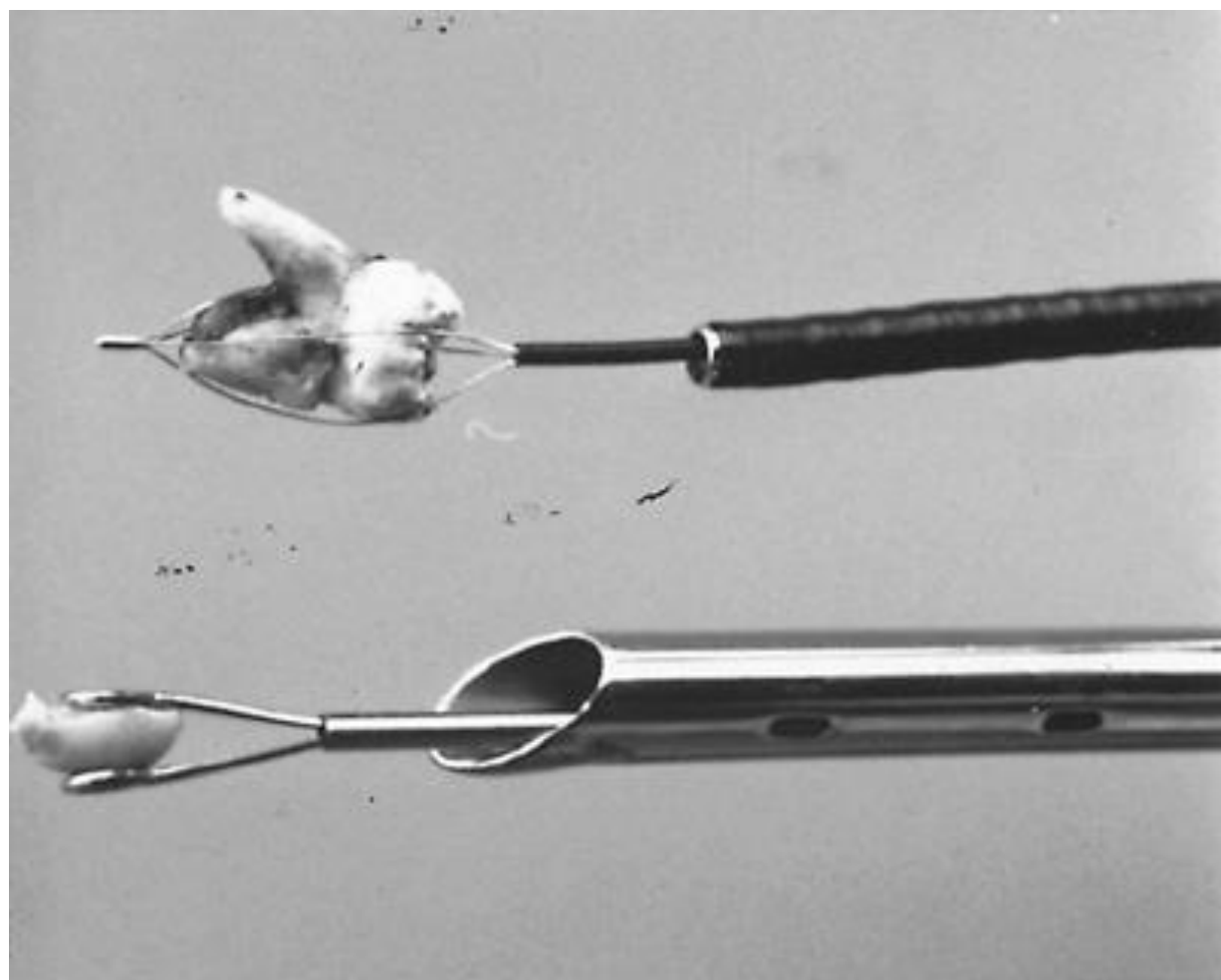


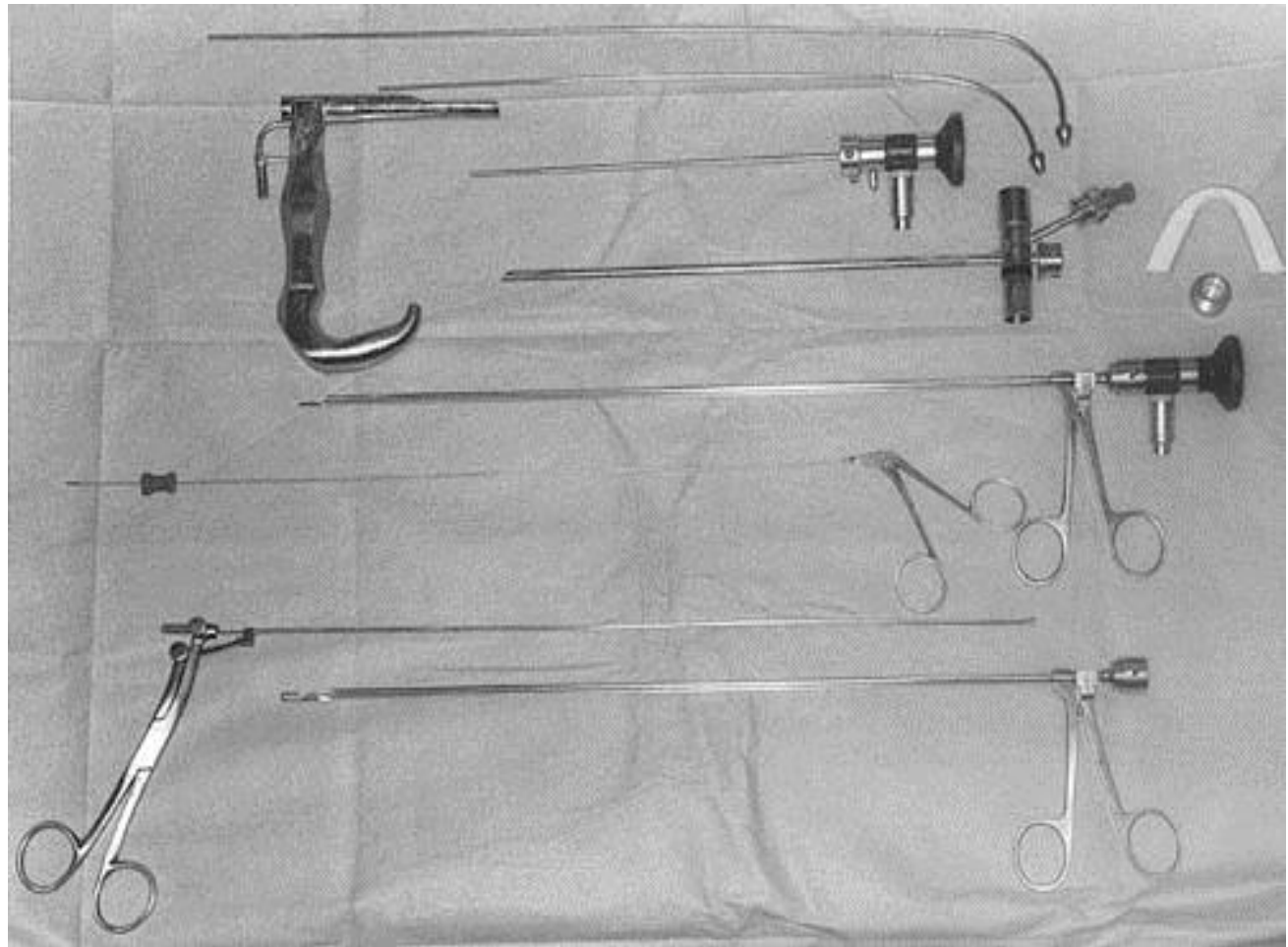
Treatment

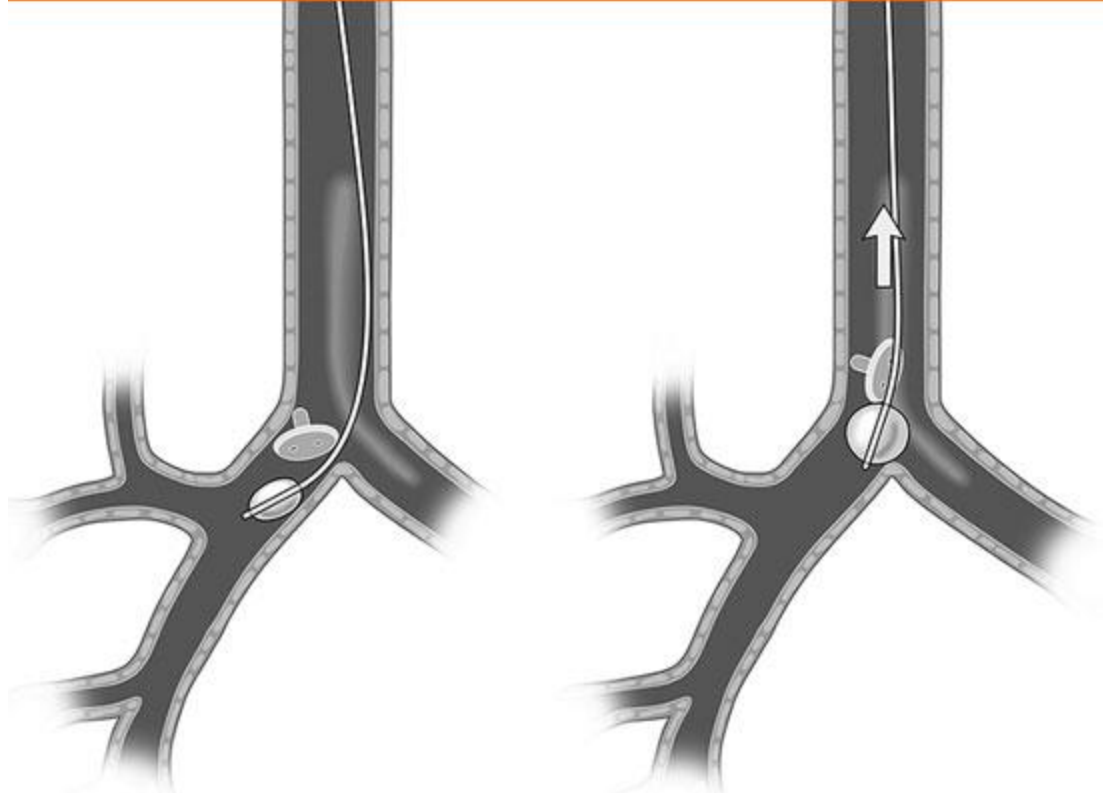
To be initiated on clinical suspicion

- Bronchoscopy: in most cases
- Bronchotomy
- Pulmonary resection









OFFICE HOURS

Prof. YOUSRY EL-SAYED

- Flat 407 Building 5 King Abdel-Aziz Hospital
- Mondays from 11 am to 1 pm
- Thursdays 11 am to 1 pm

THANK YOU